

THE CLAIMS

What is claimed is:

1. A method for time-scale compressing at least one talkspurt for
5 transmission over a telephone network, the method comprising the steps of:
 - (a) establishing an access delay for the network;
 - (b) receiving at least one input frame of voice signal;
 - (c) removing a first portion of said least one input frame to form a time-scaled frame, the first portion comprising an integer number of pitch
10 period's worth of voice signal;
 - (d) repeating steps (b) and (c) until the total amount of voice signal from a plurality of such input frames is substantially the same as the access delay.
- 15 2. The method according to claim 1, wherein a new pitch period is calculated for each frame of voice signal from which a corresponding first portion is cut.
- 20 3. The method according to claim 1, comprising the additional step of establishing a time interval over which said access delay is to be mitigated, wherein the time interval is longer than the access delay.
- 25 4. The method according to claim 1, comprising the additional step of establishing a value governing a rate at which the access delay is mitigated.
5. The method according to claim 1, wherein steps (a)-(d) are performed for each talkspurt of a call.
- 30 6. The method according to claim 1, wherein the first portion is removed from a terminal section of said frame.

7. The method according to claim 6, wherein an end portion of the time-scaled frame comprises an overlap-added segment.

5 8. The method according to claim 7, wherein the overlap-added segment is formed from a first segment of the frame, the first segment located immediately before the first portion, and a second segment of the frame, the second segment comprising an endmost portion of the terminal section of the frame.

10

9. The method according to claim 8, wherein the first and second segments are each multiplied by a window and added together to form the overlap-added segment.

15

10. The method according to claim 1, wherein the first portion is removed from the frame, even if the first portion comprises unvoiced speech.

11. The method according to claim 1, wherein the access delay is a channel access delay for the network.

20

12. The method according to claim 1, wherein the access delay is due to a delay associated with a voice activity detector.

25

13. In a communication device configured to operate in a discontinuous transmission packet telephony network having a channel access delay, the improvement comprising:

an access delay reducer configured to remove a first portion of at least one frame of input voice signal to form a time-scaled frame, the first portion comprising an integer number of pitch period's worth of the input voice signal.

30

14. The communication device according to claim 13, wherein the access delay reducer is configured to remove the first portion from a terminal section of said frame.

5

15. The communication device according to claim 14, wherein the access delay reducer is further configured to form an overlap-added segment at an end portion of the time-scaled frame.

10

16. The communication device according to claim 15, wherein the overlap-added segment is formed from a first segment of the frame, the first segment located immediately before the first portion, and a second segment of the frame, the second segment comprising an endmost portion of the terminal section of the frame.

15

17. The communication device according to claim 16, wherein the first and second segments are each multiplied by a window and added together to form the overlap-added segment.

20

18. The communication device according to claim 13, wherein the access delay reducer is configured to remove a first portion from a corresponding frame for each talkspurt of a call.

25

19. The communication device according to claim 13, wherein the access delay reducer is configured to remove the first portion from the frame, even if the first portion comprises unvoiced speech.